

## II. AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Fees in the amount of \$100.00 are included for the additional claims as follows:

Added claims: 2 @ \$50.00 = \$100.00

Added Independent Claims: 2

Total Independent Claims: 3

Independent claims in excess of 3: 0

Total Fee paid:	<hr/> \$100.00
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### Listing of Claims:

Claims 1-37 (Cancelled)

38. (Currently Amended)

A method of cryopreserving sex-selected sperm cells, comprising:

- a. obtaining sperm cells from a species of a non-human male mammal;
- b. sorting said sperm cells, without the presence of protective compounds in seminal plasma, and based upon sex-type to create a collection of sex-selected sperm cells using flow cytometry or fluorescence-activated cell sorting;
- c. cooling said sex-selected sperm cells;
- d. suspending said sex-selected sperm cells in an extender to ~~at least~~ about 5 million per milliliter of extender to ~~at least~~ about 10 million per milliliter of ~~extender~~, and; extender; and
- e. freezing said sex-selected sperm cells in said extender.

39. (Currently Amended)

A method of cryopreserving sex-selected sperm cells as described in claim 38, wherein said sperm cells from said species of said non-human male mammal are selected from the

group consisting of bovine sperm cells and equine sperm cells.

40. (Withdrawn)

A method of cryopreserving sperm cells as described in claim 39, and further comprising the step of isolating a number of bovine sperm cells between about 300,000 and about 3,000,000.

41. (Withdrawn)

A method of cryopreserving sperm cells as described in claim 39, and further comprising the step of isolating a number of bovine sperm cells of no more than about 1,000,000.

42. (Currently Amended)

A method of cryopreserving sex-selected sperm cells as described in claim 38, wherein said sperm cells from said species of said non-human male mammal comprise equine sperm cells.

43. (Previously Presented)

A method of cryopreserving sex-selected sperm cells as described in claim 42, and further comprising the step of isolating a number of equine sperm cells between about 1,000,000 and about 25,000,000.

44. (Previously Presented)

A method of cryopreserving sex-selected sperm cells as described in claim 42, and further comprising the step of isolating a number of equine sperm cells of no more than about 5,000,000.

45. (Previously Presented)

A method of cryopreserving sex-selected sperm cells as described in claim 38, wherein said step of cooling sex-selected sperm cells comprises reducing the temperature of said sex- selected sperm cells to about 5°Celsius.

46. (Previously Presented)

A method of cryopreserving sex-selected sperm cells as described in claim 45, wherein said step of reducing the temperature of said sex-selected sperm cells comprises reducing the temperature of said sex-selected sperm cells for a period of about 60 minutes to about 240 minutes.

47. (Previously Presented)

A method of cryopreserving sex-selected sperm cells as described in claim 38, wherein said extender further comprises a component which maintains osmolality and buffers pH.

48. (Previously Presented)

A method of cryopreserving sex-selected sperm cells as described in claim 47, wherein said component which maintains osmolality and buffers pH is selected from the group consisting of a buffer comprising a salt, a buffer containing a carbohydrate, and any combination thereof.

49. (Previously Presented)

A method of cryopreserving sex-selected sperm cells as described in claim 47, wherein said component which maintains osmolality and buffers pH is selected from the group consisting of sodium citrate, Tris[hydroxymethyl]aminomethane, 200mM Tris[hydroxymethyl]aminomethane, 175 mM to 225mM Tris[hydroxymethyl]aminomethane, 200 mM Tris[hydroxymethyl]aminomethane/65mM citric acid monohydrate, 175 mM to 225mM Tris[hydroxymethyl]aminomethane/50mM to 70mM citric acid monohydrate, N-Tris [hydroxymethyl]methyl-2-aminoethanesulfonic acid, 200 mM Tris[hydroxymethyl]methyl-2-aminoethanesulfonic acid, 175 mM to 225 mM Tris[hydroxymethyl]methyl-2-aminoethanesulfonic acid, 200 mM Tris[hydroxymethyl]methyl-2-aminoethanesulfonic acid/65 mM citric acid monohydrate, 175 mM to 225 mM Tris[hydroxymethyl]methyl-2-aminoethanesulfonic acid/50mM to 70 mM citric acid monohydrate, monosodium glutamate, milk, HEPES buffered medium, and any combination thereof.

50. (Previously Presented)  
A method of cryopreserving sex-selected sperm cells as described in claim 47, 48, or 49, wherein said extender has a pH in the range of about 6.5 to about 7.5.
51. (Previously Presented)  
A method of cryopreserving sex-selected sperm cells as described in claim 50, wherein said extender further comprises a cold shock protectant.
52. (Previously Presented)  
A method of cryopreserving sex-selected sperm cells as described in claim 51, wherein said cold shock protectant is selected from the group consisting of egg yolk, 20% egg yolk, 15% to 25% egg yolk, an egg yolk extract, milk, a milk extract, casein, albumin, lecithin, and any combination thereof.
53. (Previously Presented)  
A method of cryopreserving sex-selected sperm cells as described in claim 51, wherein said extender further comprises an energy source.
54. (Previously Presented)  
A method of cryopreserving sex-selected sperm cells as described in claim 53, wherein said energy source is selected from the group consisting of a saccharide, glucose, fructose, 56 mM fructose, 45mM to 60mM fructose, mannose, and any combination thereof.
55. (Withdrawn)  
A method of cryopreserving sex-selected sperm cells as described in claim 53, wherein said extender further comprises an antibiotic.
56. (Withdrawn)

A method of cryopreserving sex-selected sperm cells as described in claim 55, wherein said antibiotic is selected from the group consisting of tylosin, gentamicin, lincomycin, linco-spectin, spectinomycin, penicillin, streptomycin, and any combination thereof.

57. (Previously Presented)

A method of cryopreserving sex-selected sperm cells as described in claim 47, 51, 53, or 55, wherein said extender further comprises a cryoprotectant.

58. (Currently Amended)

A method of cryopreserving sex-selected sperm cells as described in claim 57, wherein said cryoprotectant is selected from the group consisting of disaccharides, trisaccharides, and any ~~combination~~ combination thereof.

59. (Previously Presented)

A method of cryopreserving sex-selected sperm cells as described in claim 57, wherein said cryoprotectant is selected from the group consisting of glycerol, 6% glycerol, between 5% to 7% glycerol, dimethyl sulfoxide, ethylene glycol, propylene glycol, and any combination thereof.

60. (Withdrawn)

A method of cryopreserving sex-selected sperm cells as described in claim 38, wherein the extender in which said sex-selected sperm cells are suspended comprises glycerol, sodium citrate, Tris[hydroxymethyl]aminomethane, egg yolk, fructose, and one or more antibiotics.

61. (Withdrawn)

A method of cryopreserving sex-selected sperm cells as described in claim 38, wherein the extender in which said sex-selected sperm cells are suspended comprises glycerol, sodium citrate, egg yolk, and one or more antibiotics.

62. (Withdrawn)

A method of cryopreserving sex-selected sperm cells as described in claim 38, wherein the extender in which said sex-selected sperm cells are suspended comprises glycerol, egg yolk, milk, fructose, and one or more antibiotics.

63. (Currently Amended)

A method of cryopreserving sex-selected sperm cells as described in claim 38, further comprising a step of equilibrating said sex-selected sperm cells suspended in said extender to a cooler, non-freezing temperature for a period of time prior to said freezing step (e) for a period of about 1 hour to about 18 hours.

64. (Currently Amended)

A method of cryopreserving sex-selected sperm cells as described in claim 59, further comprising a step of equilibrating said sex-selected sperm cells suspended in said extender to a cooler, non-freezing temperature for a period of time prior to said freezing step (e) over a period of not greater than 6 hours.

65. (Withdrawn)

A frozen sex-selected sperm sample in accordance with the method of claim 38.

66. (Cancelled)

67. (Withdrawn)

A method of cryopreserving sperm cells as described in claim 38, wherein said step of freezing said sex-selected sperm cells in said extender comprises freezing a number of bovine sperm cells between about 300,000 and about 5,000,000.

68. (New)

A method of cryopreserving sex-selected sperm cells, comprising:

- a. obtaining sperm cells from a species of a non-human male mammal;

- b. sorting said sperm cells, without the presence of protective compounds in seminal plasma, and based upon sex-type to create a collection of sex-selected sperm cells;
- c. cooling said sex-selected sperm cells;
- d. suspending said sex-selected sperm cells in an extender to at least about 5 million per milliliter of extender to at least about 10 million per milliliter of extender; and
- e. freezing said sex-selected sperm cells in said extender.

69. (New)

A method of cryopreserving sex-selected sperm cells, comprising:

- a. obtaining sperm cells from a species of a non-human male mammal;
- b. sorting said sperm cells, without the presence of protective compounds in seminal plasma, and based upon sex-type to create a collection of sex-selected sperm cells;
- c. cooling said sex-selected sperm cells;
- d. suspending said sex-selected sperm cells in an extender to about 5 million per milliliter of extender to about 20 million per milliliter of extender; and
- e. freezing said sex-selected sperm cells in said extender.